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EASTERN TIBET

I. Climate

The climate of eastern Tibet, particularly temperatures, varies according to elevation and the type of terrain. There is a difference of about 5,000 feet between some of the lower, major river valleys at 9,000 to 10,000 feet, where important agricultural settlements are located, and the high, 13,000 to 15,000 foot grasslands inhabited by the nomads. In theory, a difference of 5,000 feet in elevation should mean a difference of about 15°F in average temperatures; these differences, however, may be accentuated by exposure to the wind or, conversely, made less severe through protection from winds afforded by deep canyons and forested areas.

Climatic statistics based on records for 2 to 6 years are available for both Chando and Batang, as shown in the following tables. Those for Chando are from official Chinese Communist statistics and, probably, are more accurate than those from Batang, which are the records obtained by the observations made by personnel of a mission station formerly located in Batang. These statistics should be representative of the lower river valleys at about 10,000 feet; for higher elevations interpolations are made, supplemented by readings taken and observations made by travellers and explorers who travelled through this region.

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II. Temperatures

Temperatures in eastern Tibet show not only marked differences between day and night but also great differences between sunshine and shade, wind and calm. The intensity of the sun ray's increases in the clear, dry, thin air at the high elevations in eastern Tibet. At 15,000 feet the intensity of solar radiation is probably 25 percent or more great than received at lowland stations in comparable latitudes. The clear, dry air at high elevations, however, is incapable of absorbing and retaining much energy and remains chilly although the sun in intensely strong. The climate of Tibet may be described as one of cool shade and hot sun. The amount of sunlight received in Tibet probably is greater than realized because of the comparatively southerly latitude. In late December, eastern Tibet received about 10 hours of sunlight compared to somewhat over 9 hours for Washington, D.C.

Differences between day and night temperature readings are great and the statistics for Chamdo show that during the depth of winter an average minimum of near 10°F can be expected and a daily high of about 50°F. These differences probably increase in the upper valleys and on the grasslands with nightly lows reaching near 0°F to occasionally -15°F; daily maxima probably are above freezing most of the time with readings upwards to 50°F. The cold is intensified by strong northerly or westerly winds that sweep across the open areas, particularly during winter and spring afternoons. On the other hand, the numerous protected valleys, many of them forested with conifers, provide a considerable degree of protection from the biting winds and low temperatures at elevations below 14,000 feet.

III. Precipitation

Based on the records for Chamdo, about 20 to 25 inches of precipitation (Washington -- 40 inches) are received annually. There is a marked concentration during summer; in the period from May through September, some precipitation can be expected on 50 percent of the days. Monthly amounts vary from 3 to 5 inches, roughly the same as in Washington during the summer. In eastern Tibet, however, it rains more frequently than in Washington but the amounts per rain are considerably lower. Chamdo statistics show a maximum daily precipitation of only 1 to 1.5 inches. A record kept for some 50 days from mid-July through early September at Chamdo indicated that 23 days were without rain, 15 had light rain, and 10 had heavier rain. Averages for a 4-year period indicated that from May through September, rain falls on 16 to 23 days each month. Most of the rain is convectional in origin, since Chamdo records from 5 to 10 thunderstorms per month from May through September.

There are no statistics on the average amount of snow in eastern Tibet, but winter amounts are believed to be comparatively low -- probably less than the 20 inches which is the average total for Washington. As much as 3 to 4 inches have been recorded in Chamdo in a month, with snow accumulations occurring on 3 to 5 days from December through March. Early winter and early spring are the months with the greatest expectation of snow. At higher elevations near Chamdo, snow occurs more often and the accumulations greater. Above 15,000 feet, flurries occur even during the summer months.

Some of the higher passes are snow-covered and difficult to cross during winter. Generally, though, either alternate passes are available or, if pressed, a pass can be crossed in spite of the snow. Most travellers, however, agree that winter travel over the grasslands is not difficult with bright, clear, if cold, days being the rule.

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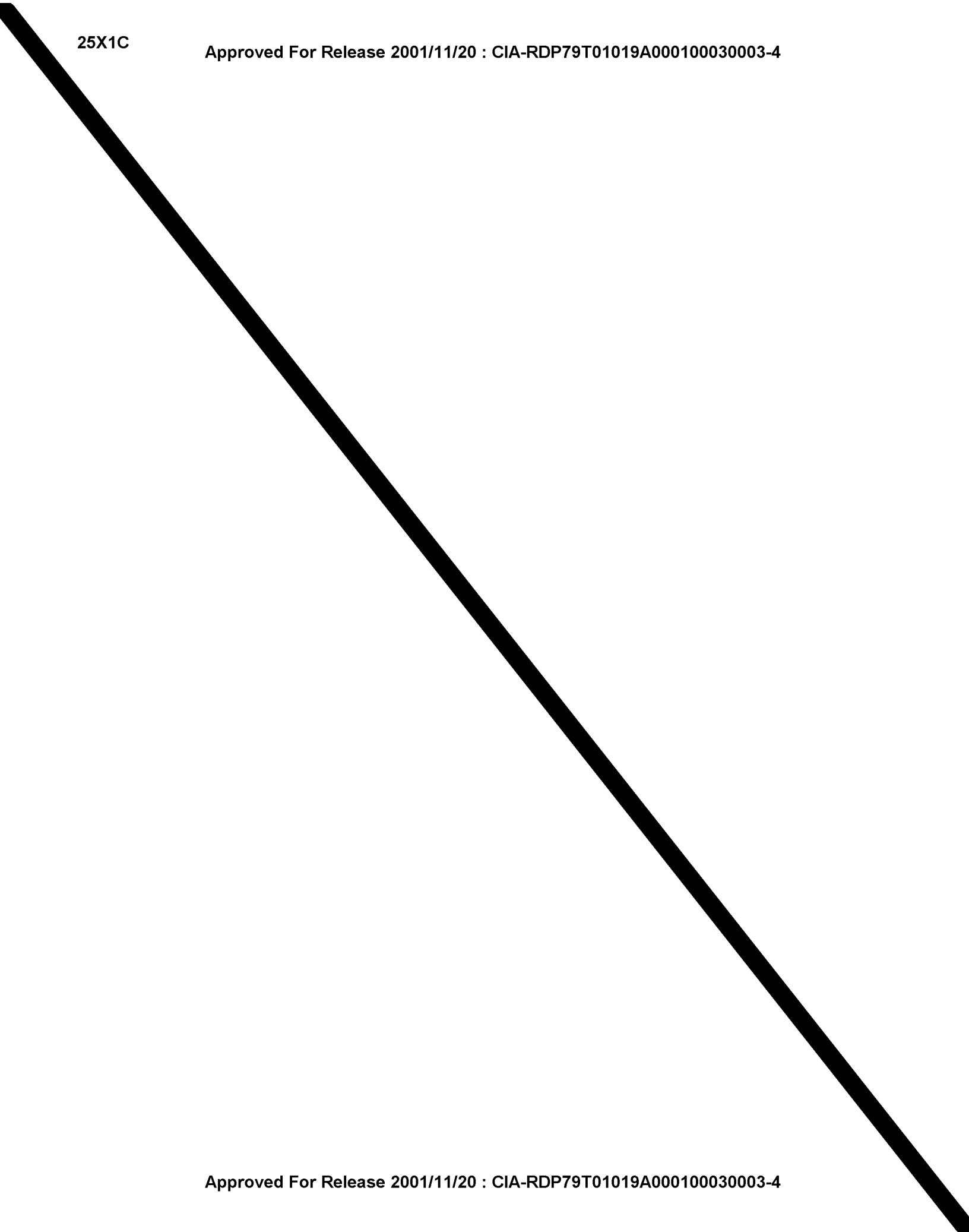

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SELECTED CLIMATIC STATISTICS FOR BATANG AND CHAMDO*

Mean Monthly Temperatures

	Jan	Apr	Jul	Oct
Batang	39	58	71	54
Chamdo	30	48	60	49

Mean Maximum Temperature

	Jan	Apr	Jul	Oct
Batang	52	70	82	65
Chamdo	49	63	75	66

Mean Minimum Temperature

	Jan	Apr	Jul	Oct
Batang	26	45	59	44
Chamdo	11	33	49	34

Absolute Minimum Temperature

	Jan	Apr	Jul	Oct
Batang	15	34	49	29
Chamdo	0	20	33	20

Number of Days Temperature Below Freezing

	Jan	Apr	Jul	Oct
Batang	29	0	0	0
Chamdo	31	4	0	13

* Elevation of Batang -- 9,000 feet. Elevation of Chamdo -- 10,600 feet Records for Chamdo are for 4 years; records for Batang vary from 2 to 6 years. All temperatures in degrees Fahrenheit.

Amount of Precipitation

	Jan	Apr	May	June	Jul	Aug	Sep	Oct	Total
Chamdo	neg	0.9	3.1	3.5	5.3	3.8	3.1	1.2	22.0

Average Number of Days With Over 0.1 Millimeter of Precipitation

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Chamdo	3	3	6	9	16	19	23	20	19	10	1	2

Maximum Snow Accumulation

	Jan	Feb	Mar	Apr	Nov	Dec
Chamdo	1	1.7	.8	3.2	.3	4.0

Average Number of Days of Snow Accumulation

	Nov	Dec	Jan	Feb	Mar	Apr	Year
Chamdo	1	4	3	3	5	2	15.5

Average Number of Clear Days

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Batang	9	7	9	4	9	6	5	5	3	18	14	16
Chamdo	11	5	2	2	5	5	3	3	5	12	13	17

Average Number of Cloudy Days

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Batang	4	9	5	3	3	3	5	8	7	6	5	2
Chamdo	4	5	12	14	11	15	17	12	11	6	3	4